

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

A19SO  
Revision 9  
PIPER

PA-44-180 (pg 1)  
PA-44-180T (pg 4)

February 5, 2003

TYPE CERTIFICATE DATA SHEET NO. A19SO

This data sheet, which is part of Type Certificate No. A19SO, prescribes conditions and limitations under which the product for which type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder                      The New Piper Aircraft, Inc.  
2926 Piper Drive  
Vero Beach, Florida    32960

IA. - Model PA-44-180, Seminole, 4 PCLM (Normal Category), Approved March 10, 1978.

Engine    1 Lycoming O-360-E1A6D with carburetor setting 10-5092, 10-5219, or  
10-6019 (Left Side)  
1 Lycoming LO-360-E1A6D with carburetor setting 10-5092, 10-5219, or  
10-6019 (Right Side)

Fuel    100 or 100LL aviation grade fuel

Engine Limits    For all operations, 2700 r.p.m. (180 hp)

Propeller and Propeller Limits                      Left Engine:  
1 Hartzell, Hub Model HC-C2Y(K, R) -2CEUF, Blade Model FC7666A-2R  
or Hub Model HC-C3YR-2EUF, Blade Model FC7663-5R

Right Engine:  
1 Hartzell, Hub Model HC-C2Y(K, R) -2CLEUF, Blade Model FJC7666A-2R  
or Hub Model HC-C3YR-2LEUF, Blade Model FJC7663-5R

Pitch Setting at 30" Station:

Two-Blade  
High 79° - 81°, Low 12.4° ± 0.2°  
Diameter: Not over 74 inches  
Not under 72 inches

Three-Blade  
High 81° - 83°, Low 10.6 ± .1°  
Diameter: Not over 73 inches  
Not under 72 inches

Spinner:

Two-Blade  
Hartzell P/N C2285-3 Spinner Assy  
(Left)  
Hartzell P/N C2285-3L Spinner Assy  
(Right)  
See NOTE 4.

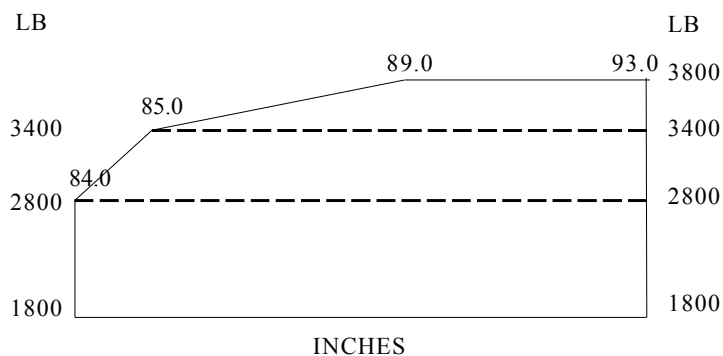
Three-Blade  
Hartzell P/N C4558 Spinner Assy  
(Left)  
Hartzell P/N C4558 Spinner Assy  
(Right)  
See NOTE 4.

Governor Assembly:    1 Hartzell Hydraulic Governor Model E-3-2 (Left)  
1 Hartzell Hydraulic Governor Model E-3-2L (Right)  
or  
1 Hartzell Hydraulic Governor Model E-8-2L (Right) with  
synchrophaser (Piper Drawing No. 36889 Synchrophaser  
Installation, S/N 44-7995278 and up)

|          |   |   |   |   |   |   |   |   |
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|                        |          |                                  |          |
|------------------------|----------|----------------------------------|----------|
| <u>Airspeed Limits</u> | $V_{NE}$ | (Never Exceed)                   | 202 KIAS |
|                        | $V_{NO}$ | (Maximum Structural Cruise)      | 169 KIAS |
|                        | $V_A$    | (Maneuvering 3800 lb.)           | 135 KIAS |
|                        | $V_A$    | (Maneuvering 2700 lb.)           | 112 KIAS |
|                        | $V_{FE}$ | (Maximum Flaps Extended)         | 111 KIAS |
|                        | $V_{LO}$ | (Maximum Landing Gear Operation) |          |
|                        |          | Extension                        | 140 KIAS |
|                        |          | Retraction                       | 109 KIAS |
|                        | $V_{LE}$ | (Maximum Landing Gear Extended)  | 140 KIAS |
|                        | $V_{MC}$ | (Minimum Control Speed)          | 56 KIAS  |

|                   |  |    |         |    |                  |
|-------------------|--|----|---------|----|------------------|
| <u>C.G. Range</u> | (+89.0)  | to | (+93.0) | at | 3800 lb.         |
|                   | (+85.0)  | to | (+93.0) | at | 3400 lb.         |
|                   | (+84.0)  | to | (+93.0) | at | 2800 lb. or less |
|                   | Straight line variation between points given.              |    |         |    |                  |
|                   | Moment change due to retracting landing gear (+819 in-lb.) |    |         |    |                  |



|                                |   |
|--------------------------------|---|
| <u>Empty Weight C.G. Range</u> | None  |
| <u>Maximum Weight</u>          | Ramp 3816 lb.<br>Takeoff 3800 lb.<br>Landing 3800 lb.   |
| <u>Number of Seats</u>         | 4 (2 at +80.5, 2 at +118.1)   |
| <u>Maximum Baggage</u>         | 200 lb. at +142.8   |
| <u>Fuel Capacity</u>           | 110 gallons (2 nacelle tanks) at +95.0 (108 gallons usable)<br>(See NOTE 1 for data on system fuel) |
| <u>Oil Capacity</u>            | 6 quarts per engine (4 quarts per engine usable)<br>(See NOTE 1 for data on system oil)             |

|                                  |                     |      |                      |       |                     |
|----------------------------------|---------------------|------|----------------------|-------|---------------------|
| <u>Control Surface Movements</u> | Ailerons            | Up   | 23° (±2°)            | Down  | 17° (±2°)           |
|                                  | Stabilator          | Up   | 15° (±1°)            | Down  | 3° (±1°)            |
|                                  | Rudder              | Left | 37° (+1°, -0°)       | Right | 37° (+1°, -0°)      |
|                                  | Stabilator Trim Tab | Down | 9° (±1°)             | Up    | 4° (±1°)            |
|                                  |                     |      | (Stabilator neutral) |       |                     |
|                                  | Wing Flaps          | Up   | 0° (±1°)             | Down  | 10°, 25°, 40° (±2°) |
|                                  | Rudder Trim Tab     | Left | 26° (±2°)            | Right | 26° (±2°)           |
|                                  |                     |      | (Rudder neutral)     |       |                     |
|                                  | Nose Wheel Travel   | Left | 30° (±1°)            | Right | 30° (±1°)           |

|                                      |   |
|--------------------------------------|---|
| <u>Manufacturer's Serial Numbers</u> | 44-7995001 through 44-8195026 (See NOTE 5 for airworthiness certification eligibility in the United States) |
|--------------------------------------|---|

IB. - Model PA-44-180, Seminole, 4 PCLM (Normal Category), Approved March 10, 1978.

Engine 1 Lycoming O-360-A1H6 with carburetor setting 10-5219 or 10-6019 (Left Side)  
1 Lycoming LO-360-A1H6 with carburetor setting 10-5219 or 10-6019 (Right Side)

Fuel 100 or 100LL aviation grade fuel

Engine Limits For all operations, 2700 r.p.m. (180 hp)

Propeller and Propeller Limits Left Engine:  
1 Hartzell, Hub Model HC-C2Y(K, R) -2CEUF, Blade Model FC7666A-2R

Right Engine:  
1 Hartzell, Hub Model HC-C2Y(K, R) -2CLEUF, Blade Model FJC7666A-2R

Pitch Setting at 30" Station:  
High 79° - 81°, Low 12.4° ± 0.2°  
Diameter: Not over 74 inches  
Not under 72 inches

Spinner: Hartzell P/N C2285-3 Spinner Assy (Left)  
Hartzell P/N C2285-3L Spinner Assy (Right)  
See NOTE 4.

Governor Assembly: 1 Hartzell Hydraulic Governor Model U-3-15 (Left) with  
unfeathering accumulator  
1 Hartzell Hydraulic Governor Model U-3-15L (Right) with  
unfeathering accumulator

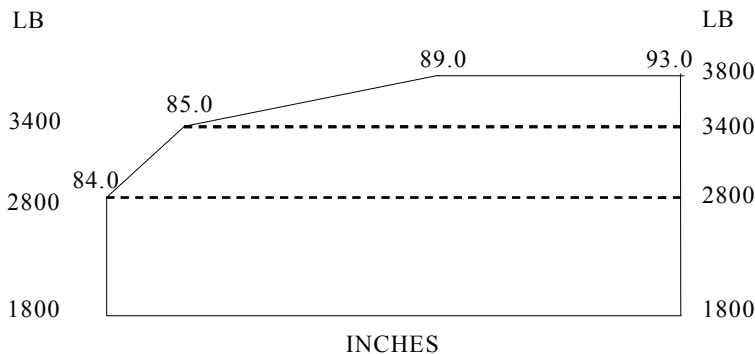
Airspeed Limits

|                 |                                  |          |
|-----------------|----------------------------------|----------|
| V <sub>NE</sub> | (Never Exceed)                   | 202 KIAS |
| V <sub>NO</sub> | (Maximum Structural Cruise)      | 169 KIAS |
| V <sub>A</sub>  | (Maneuvering - 3800 lb.)         | 135 KIAS |
| V <sub>A</sub>  | (Maneuvering - 2700 lb.)         | 112 KIAS |
| V <sub>FE</sub> | (Maximum Flaps Extended)         | 111 KIAS |
| V <sub>LO</sub> | (Maximum Landing Gear Operation) |          |
|                 | Extension                        | 140 KIAS |
|                 | Retraction                       | 109 KIAS |
| V <sub>LE</sub> | (Maximum Landing Gear Extended)  | 140 KIAS |
| V <sub>MC</sub> | (Minimum Control Speed)          | 56 KIAS  |

C.G. Range

|         |    |         |    |                  |
|---------|----|---------|----|------------------|
| (+89.0) | to | (+93.0) | at | 3800 lb.         |
| (+85.0) | to | (+93.0) | at | 3400 lb.         |
| (+84.0) | to | (+93.0) | at | 2800 lb. or less |

Straight line variation between points given.  
Moment change due to retracting landing gear (+819 in-lb.)



|                                  |   |   |          |           |
|----------------------------------|---|---|----------|-----------|
| <u>Empty Weight C.G. Range</u>   | None  |   |          |           |
| <u>Maximum Weight</u>            | Ramp  | 3816 lb.                                    |          |           |
|                                  | Takeoff   | 3800 lb.                                    |          |           |
|                                  | Landing   | 3800 lb.                                    |          |           |
| <u>Number of Seats</u>           | 4 (2 at +80.5, 2 at +118.1)   |   |          |           |
| <u>Maximum Baggage</u>           | 200 lb. at +142.8   |   |          |           |
| <u>Fuel Capacity</u>             | 110 gallons (2 nacelle tanks) at +95.0 (108 gallons usable)<br>(See NOTE 1 for data on system fuel) |   |          |           |
| <u>Oil Capacity</u>              | 8 quarts per engine (6 quarts per engine usable)<br>(See NOTE 1 for data on system oil)             |   |          |           |
| <u>Control Surface Movements</u> | Ailerons  | (±2°)                                       | Up 23°   | Down 17°  |
|                                  | Stabilator  | (±1°)                                       | Up 15°   | Down 3°   |
|                                  | Rudder  | (+1°, -0°)                                  | Left 37° | Right 37° |
|                                  | Stabilator Trim Tab   | (±1°)                                       | Down 9°  | Up 4°     |
|                                  | (Stabilator neutral)  |   |          |           |
|                                  | Wing Flaps  | (±2°)                                       | Up 0°    | Down 40°  |
|                                  | Rudder Trim Tab   | (±2°)                                       | Left 26° | Right 26° |
|                                  | (Rudder neutral)  |   |          |           |
|                                  | Nose Wheel Travel   | (±1°)                                       | Left 30° | Right 30° |
|                                  | <u>Manufacturer's Serial Numbers</u>  | 4495001 through 4495013, and 4496001 and up |          |           |

## II. - Model PA-44-180T, Turbo Seminole, 4 PCLM (Normal Category), Approved November 29, 1979.

|                                       |   |  |  |  |
|---------------------------------------|---|--|--|--|
| <u>Engine</u>                         | 1 Lycoming TO-360-E1A6D with carburetor setting 10-5256<br>1 Lycoming LTO-360-E1A6D with carburetor setting 10-5256   |  |  |  |
| <u>Fuel</u>                           | 100 or 100LL aviation grade fuel  |  |  |  |
| <u>Engine Limits</u>                  | For all operations, 36.5 in. Hg at 2575 r.p.m. (180 hp)   |  |  |  |
| <u>Propeller and Propeller Limits</u> | <u>Left Engine:</u><br>1 Hartzell, Hub Model HC-C2YR -2C ( )UF, Blade Model FC7666A-2R or FC7666AB-2R   |  |  |  |
|                                       | <u>Right Engine:</u><br>1 Hartzell, Hub Model HC-C2YR-2CL ( ) UF, Blade Model FJC7666A-2R or FJC7666AB-2R   |  |  |  |
|                                       | <u>Governor Assembly:</u><br>1 Hartzell Hydraulic Governor Model E-3-5 (Left)<br>or 1 Hartzell Hydraulic Governor Model U-3-10 (Left) with unfeathering accumulator<br>1 Hartzell Hydraulic Governor Model E-3-5L (Right)<br>or 1 Hartzell Hydraulic Governor Model U-3-10L (Right) with unfeathering accumulator<br>or 1 Hartzell Hydraulic Governor Model E-8-5L (Right) with Synchrophaser Installation, Piper Dwg. 86818-2<br>or 1 Hartzell Hydraulic Governor Model U-8-10L (Right) with unfeathering accumulator and Synchrophaser Installation, Piper Dwg. 86818-2 |  |  |  |

Propeller and Propeller Limits  
(continued)

Pitch Setting at 30" Station:  
High  $79^{\circ}$  -  $81^{\circ}$ , Low  $13.1^{\circ} \pm 0.2^{\circ}$   
Diameter: Not over 74 inches  
Not under 72 inches

Spinner: Hartzell P/N C2285-3 Spinner Assy (Left)  
Hartzell P/N C2285-3L Spinner Assy (Right)  
See NOTE 4.

Left Engine:

1 Hartzell, Hub Model HC-C3YR -2 ( )UF, Blade Model FC7663-5R or FC7663B-5R

Right Engine:

1 Hartzell, Hub Model HC-C3YR-2L ( ) UF, Blade Model FJC7663-5R or  
FJC7663B-5R

Governor Assembly:

- 1 Hartzell Hydraulic Governor Model E-3-5 (Left)
- or 1 Hartzell Hydraulic Governor Model U-3-10 (Left) with unfeathering accumulator
- 1 Hartzell Hydraulic Governor Model E-3-5L (Right)
- or 1 Hartzell Hydraulic Governor Model U-3-10L (Right) with unfeathering accumulator
- or 1 Hartzell Hydraulic Governor Model E-8-5L (Right) with Synchrophaser Installation, Piper Dwg. 86818-2
- or 1 Hartzell Hydraulic Governor Model U-8-10L (Right) with unfeathering accumulator and Synchrophaser Installation, Piper Dwg. 86818-2

Pitch Setting at 30" Station:  
High  $81^{\circ}$  -  $83^{\circ}$ , Low  $11.2^{\circ} \pm 0.1^{\circ}$   
Diameter: Not over 73 inches  
Not under 72 inches

Spinner:

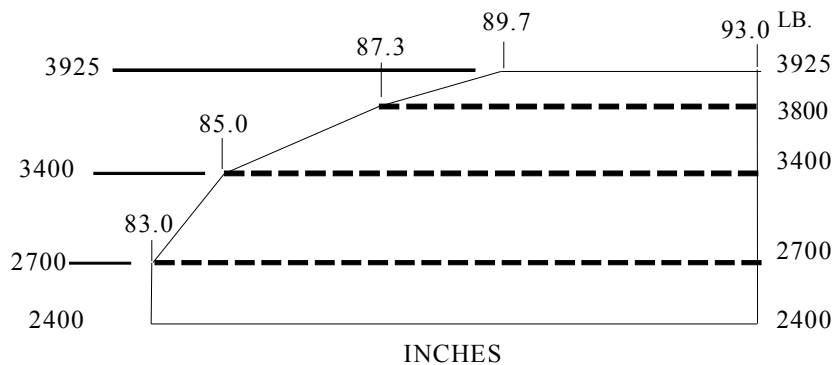
Hartzell P/N C4558 Spinner Assy (Left)  
Hartzell P/N C4558 Spinner Assy (Right)  
See NOTE 4.

"Avoid continuous operation at manifold pressures below 15" Hg above 12,000 feet altitude."

Airspeed Limits

|          |                                  |          |
|----------|----------------------------------|----------|
| $V_{NE}$ | (Never Exceed)                   | 202 KIAS |
| $V_{NO}$ | (Maximum Structural Cruise)      | 170 KIAS |
| $V_A$    | (Maneuvering - 3925 lb.)         | 137 KIAS |
| $V_A$    | (Maneuvering - 2700 lb.)         | 112 KIAS |
| $V_{FE}$ | (Maximum Flaps Extended)         | 111 KIAS |
| $V_{LO}$ | (Maximum Landing Gear Operation) |          |
|          | Extension                        | 140 KIAS |
|          | Retraction                       | 109 KIAS |
| $V_{LE}$ | (Maximum Landing Gear Extended)  | 140 KIAS |
| $V_{MC}$ | (Minimum Control Speed)          | 57 KIAS  |

|                   |         |    |         |    |                  |
|-------------------|---------|----|---------|----|------------------|
| <u>C.G. Range</u> | (+89.7) | to | (+93.0) | at | 3925 lb.         |
|                   | (+87.3) | to | (+93.0) | at | 3800 lb.         |
|                   | (+85.0) | to | (+93.0) | at | 3400 lb.         |
|                   | (+83.0) | to | (+93.0) | at | 2700 lb. or less |

Empty Weight C.G. Range

None

Maximum Weight

Ramp 3943 lb.  
 Takeoff 3925 lb.  
 Landing 3800 lb.

Number of Seats

4 (2 at +80.5, 2 at +118.1)

Maximum Baggage

200 lb. at +142.8

Fuel Capacity

110 gallons (2 nacelle tanks) at +95.0 (108 gallons usable)  
 (See NOTE 1 for data on system fuel)

Oil Capacity

6 quarts per engine (4 quarts per engine usable)  
 (See NOTE 1 for data on system oil)

Maximum Operating Altitude

20,000 feet

Control Surface Movements

|                      |                   |      |     |       |     |
|----------------------|-------------------|------|-----|-------|-----|
| Ailerons             | ( $\pm 2^\circ$ ) | Up   | 23° | Down  | 17° |
| Stabilator           | ( $\pm 1^\circ$ ) | Up   | 15° | Down  | 3°  |
| Rudder               | (+1°, -0°)        | Left | 37° | Right | 37° |
| Stabilator Trim Tab  | ( $\pm 1^\circ$ ) | Up   | 4°  | Down  | 9°  |
| (Stabilator neutral) |                   |      |     |       |     |
| Wing Flaps           | ( $\pm 2^\circ$ ) | Up   | 0°  | Down  | 40° |
| Rudder Trim Tab      | ( $\pm 2^\circ$ ) | Left | 26° | Right | 26° |
| (Rudder neutral)     |                   |      |     |       |     |
| Nose Wheel Travel    | ( $\pm 1^\circ$ ) | Left | 30° | Right | 30° |

Manufacturer's Serial Numbers

44-8107001 through 44-8207020

DATA PERTINENT TO ALL MODELSDatum

78.4" forward of wing leading edge at wing station 106.

Leveling Means

Two screws left side fuselage below window.

Certification Basis

Type Certificate No. A19SO issued March 10, 1978.  
Date of application for Type Certificate, January 17, 1976.

PA-44-180: Federal Aviation Regulations (FAR) Part 23 effective February 1, 1965, through Amendment 23-16 effective February 14, 1975; FAR 23.1557(c)(1) as amended by Amendment 23-18 effective May 2, 1977; and FAR 36 effective December 1, 1969, through Amendment 36-4.

Equivalent Safety Finding: FAR 23.1545(a).

PA-44-180T: FAR 23 effective February 1, 1965, through Amendment 23-16 effective February 14, 1975; FAR 23.207 and 23.1091 as amended by Amendment 23-7 effective September 14, 1969; FAR 23.201 and 23.203 as amended by Amendment 23-14 effective December 20, 1973; FAR 23.1093 and 23.1557(c)(1) as amended by Amendment 23-18 effective May 2, 1977; FAR 23.1581(b)(2) as amended by Amendment 23-21 effective March 1, 1978; FAR 23.1545(a) as amended by Amendment 23-23 effective December 1, 1978; and FAR 36 effective December 1, 1969, through Amendment 36-9 effective January 15, 1979. Compliance with FAR 23.1441 as amended by Amendment 23-9 effective June 17, 1970, shown with optional supplemental oxygen.

Production Basis

Production Certificate No. 206. Production Limitation Record issued and the manufacturer authorized to issue airworthiness certificate under the Delegation Option provisions of FAR 21.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. In addition, the following items of equipment are required:

PA-44-180: POH and FAA Approved AFM, VB-860, approved March 23, 1978, for S/N 44-7995001 through 44-8195026.

POH and FAA approved AFM, VB-1380, approved July 20, 1989, for S/N 4495001 through 4495013.

POH, VB-1616, approved July 12, 1995, for S/N 4496001 and up.

PA-44-180T: POH and FAA approved AFM, VB-1100, approved March 14, 1980, for S/N 44-8107001 through 44-8207020.

## NOTE 1.

Current Weight and Balance Report, including list of equipment included in certificated empty weight and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding center-of-gravity locations must include undrainable system oil (not included in oil capacity) and unusable fuel as noted below:

Fuel: 12.0 lb. at (+95.0)

Oil: 3.6 lb. at (+68.8)

## NOTE 2.

All placards required in the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual must be installed in the appropriate locations.

## NOTE 3.

The service life of the wing and associated structure has been established as 14663 hours maximum.

NOTE 4. The PA-44-180, S/N 44-7995001 through 44-8195026, may be operated without spinner domes or without spinner domes and rear bulkheads, except when equipped with three-bladed propellers and air conditioning, in which case only the spinner dome may be removed.

The PA-44-180, S/N 4495001 through 4495013, and 4496001 and up, may be operated with only the spinner dome removed.

NOTE 5. The following serial numbers are not eligible for airworthiness certification in the United States: 44-7995235 and 44-7995298.

...END...